

**10 CSR 10-5.420 Control of Equipment Leaks
from Synthetic Organic Chemical and
Polymer Manufacturing Plants**

(1) Definitions.

(A) A component shall be considered in gas VOC service if it contacts a process fluid containing ten percent (10%) or greater VOC by weight that is in a gaseous state at operating conditions.

(B) A component shall be considered in light liquid VOC service if it contacts a process fluid containing ten percent (10%) or greater light liquid VOC by weight.

(C) A light liquid VOC is defined as a fluid VOC with a vapor pressure greater than 0.3 kPa at 20°C.

(D) Definitions of certain terms specified in this rule may be found in 10 CSR 10-6.020.

(2) Applicability.

(A) This rule shall apply throughout St. Louis City and Jefferson, St. Charles, Franklin and St. Louis Counties.

(B) This rule applies to all source operations with the potential of processing at least nine hundred eighty (980) tons per year of light liquid and gaseous VOC and producing as intermediate or final products any of those chemicals listed in 10 CSR 10-6.070 (CFR Part 60, Subpart VV).

(3) General Provisions.

(A) Leaking components shall be repaired within fifteen (15) days of the date the leak was detected. A source shall be considered leaking if monitoring results in an instrument reading of ten thousand parts per million by volume (10,000 ppmv) or greater at a distance no more than five (5) centimeters from the source or if visual inspection indicates leaks. Repair shall be considered as reduction of the measured VOC concentration below ten thousand parts per million by volume (10,000 ppmv) at a distance of no more than five (5) centimeters from the source. Leaking components which cannot be repaired without a unit shutdown shall be repaired at the next scheduled shutdown or within ninety (90) days of the date the leak was detected, whichever comes first.

(B) The detection instrument and the monitoring method employed shall be in accordance with 10 CSR 10-6.070, (CFR, Part 60, Appendix A, Method 21).

(C) Pumps with double mechanical seals including a barrier fluid system shall be exempt from the requirements of subsection (3)(F) if))

1. Operated with the barrier fluid at a pressure greater than the pump stuffing box pressure; or

2. Equipped with a barrier fluid degassing reservoir that is connected by a closed vent system to a control device; or

3. Equipped with a system that purges the barrier fluid into a process stream with zero (VOC) emissions to the atmosphere.

(D) Safety/relief valves equipped in series with a rupture disk and a spring return valve, or any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage to a control device shall be exempt from the requirements of subsections (3)(E) through (J).

(E) Open-ended valves or lines shall be equipped with a cap, plug or second valve to seal the open end except during operations requiring process fluid flow through the open-ended valve or line, during maintenance procedures or to ensure safe operations.

(F) Quarterly monitoring shall be required for the following components in VOC service:

1. Pumps in light liquid VOC service; and

2. Compressors in gas VOC service.

(G) Valves in VOC service not externally regulated or that are difficult or unsafe to monitor shall be monitored annually during April and repaired if leaking.

(H) All valves in VOC service shall be performance tested annually during April. Performance testing shall consist of monitoring all valves in VOC service and repairing any that are leaking. If more than two percent (2%) of the valves monitored in any process unit are leaking, all valves in VOC service in that process unit except those covered by subsection (3)(E) shall

be monitored quarterly until less than two percent (2%) are leaking.

(I) Pumps in light liquid VOC service shall be visually inspected weekly for indications of leaks.

(J) Safety/relief valves and any other pressure relief devices in VOC service shall be additionally monitored after each pressure relief.

(4) Reporting and Recordkeeping. The owner or operator of a synthetic organic chemical or polymer manufacturing plant covered by this rule shall maintain a listing of the pumps, compressors and valves in VOC service and identify the VOC contained in each component. The owner or operator shall also maintain records of the results of the monitoring required in section (3), including tagging any leaking components and actions taken to repair any leaks that are discovered. These records shall be kept by the owner or operator for at least two (2) years and submitted to the director upon request.

(5) Compliance Date. Owners or operators subject to this rule shall be in compliance with the monitoring, leak repair and recordkeeping procedures described in section (3) and (4) of this rule no later than October 11, 1986.

EPA Rulemakings

Description: The EPA approved revisions to the regulations which tightened recordkeeping requirements and made other administrative changes.

[illegible]

Description: The EPA approved a new rule which established inspection and monitoring requirements for pump, valve and pipe leaks in SOCM plants.

[illegible]

None.